| Inc | lov  | Ωf | Cla | im     |
|-----|------|----|-----|--------|
| шк  | IUX. | u  | Ula | 111113 |



Application No.

10/081,598

HILLE ET AL.

Examiner

Art Unit

Jacob Y Choi

2875

| √ | Rejected |
|---|----------|
| = | Allowed  |

|   | (Through numeral)<br>Cancelled |  |
|---|--------------------------------|--|
| - |                                |  |
| ÷ | Restricted                     |  |

| N | Non-Elected  |
|---|--------------|
| 1 | Interference |

| Α | Appeal   |
|---|----------|
| 0 | Objected |

| Clai     | m                    | 3/30/03<br>3/30/04<br>3/30/04 |                |              |          |              |    |          |   |          |           |          |            |
|----------|----------------------|-------------------------------|----------------|--------------|----------|--------------|----|----------|---|----------|-----------|----------|------------|
| Final    | Original             | 3/20/03                       | 1/12/04        | 3/30/04      |          |              |    |          |   |          |           |          |            |
|          |                      |                               |                |              | _        | L            |    |          |   |          | _         | -        | _          |
| 2        | 1 2 3                | 1                             | -              | Ξ            | <u> </u> | ╀            | 4  |          | ┝ | +        |           | ╀        | -1         |
| 2        | _2                   | 1                             | 7              | =            | <u> </u> | Ļ            | 4  |          | Ļ | 4        |           | ╁-       | -          |
|          | 3                    | 1                             |                |              | _        | L            | 4  |          | L | _        |           | ┺        | 4          |
|          | 4                    | 1                             | <br>           |              |          | L            |    |          | L | _        |           | L        | 4          |
|          | 5                    | 1                             | <br>V          |              |          |              |    |          |   |          |           | L        |            |
| 3        | 6                    | 1                             | 1              | =            |          | Γ            | ٦  |          | Γ |          |           |          | :          |
|          | 7                    |                               |                |              | T        | Т            | ٦  |          | Γ |          |           | Τ        |            |
| 4        | 8                    | 7                             | 0              | =            | Г        | T            |    |          | Τ |          |           | T        | 7          |
| 5        | 9                    | V                             | 0              | =            |          | T            |    |          | T |          |           | T        | 7          |
| <u> </u> | 10                   | 1                             | 1              | t=           | ✝        | t            | _  |          | t |          |           | T        | $\neg$     |
| 6        | 11                   | i                             | 1              | =            | $\vdash$ | $^{\dagger}$ |    | Т        | t | _        | Т         | †        | $\neg$     |
| 6<br>7   | 12                   |                               | V              | =            | +        | +            | -  |          | + | -        |           | +        | 寸          |
|          | 12                   | 1                             |                | +-           | +-       | +            | -  | -        | + | _        | $\vdash$  | +        | $\dashv$   |
|          | 13                   | 1                             |                |              | $\vdash$ | +            | -  | -        | ╀ | _        | $\vdash$  | +        | $\dashv$   |
| <u> </u> | 14                   | V                             | <del>  -</del> |              | +-       | +            | _  | -        | + | _        | $\vdash$  | +        | 닉          |
| 8        | 15_                  | V                             | ٧              | =            | +-       | 4-           |    | <u> </u> | 1 |          | -         | +        | _          |
|          | 13<br>14<br>15<br>16 | V                             | 1              |              | 1        | 1            | _  | _        | 1 |          | $\vdash$  | 4        | _          |
|          | 17                   | V                             |                |              | 1_       | L            |    | L        | 1 |          | L         | 4        | _          |
| 9        | 18                   | 1                             | 1              | =            |          |              |    | _        |   | _        |           | _        |            |
|          | 19                   | 1                             |                | T            | Т        | Т            |    | ľ        |   |          |           | $\perp$  |            |
|          | 20                   | V                             |                |              |          | T            |    | Γ        | T |          |           | Т        |            |
| 10       | 21                   | 7777                          | 1              | 1=           | T        | †            | _  | T        | T | _        | Τ         | 1        |            |
|          | 22                   | 1                             | † <u>-</u> -   |              | +        | +            |    | ╁╴       | † | _        | T         | 7        |            |
| 11       | 22                   | 1                             | 1              | +            | +-       | +            |    | ╁        | + | _        | +-        | +        |            |
| 11       | 23<br>24             | 1                             | +`             | ╀            | ┿        | +            | -  | ╁        | + | _        | H         | 7        |            |
| 10       | 24                   | · V                           | 0              | +=           | -        | +            | -  | ╁╴       | t |          | -         | +        | _          |
| 12       | 25                   | 7                             | 10             | ╀            | _        | +            |    | ╁        | + | _        | ╁         | +        | _          |
| 13       | 26                   | 17                            | 10,            | =            |          | +            | _  | ╀        | + |          | ╀         | $\dashv$ |            |
|          | 27                   | 12                            | √              | - -          | -        | 4            |    | ╄        | 4 | _        | +-        | -        | _          |
| 14       | 28<br>29             | V                             | 1              | 1=           | -        | 4            | _  | 1        | 4 | _        | ╀         | 4        | _          |
| 15       | 29                   | _ ^                           | V              |              |          | 4            |    | 1        | 4 | _        | Ļ         | 4        |            |
| 16       | 30                   | N                             | \ \V           | =            |          | $\perp$      |    | L        |   |          | Ļ         | _        |            |
|          | 31                   | \ \ \ \ \ \                   | <i>-</i>       | -            |          | J            |    | L        | ╝ |          |           |          |            |
| 17       | 32                   | 1                             | / V            | 1 =          | :        | T            | _  |          |   | _        | 1         |          |            |
|          | 33                   |                               |                |              | .        | 1            |    | T        | 1 |          | Ι         |          |            |
|          | 34                   | \                             | 7 -            |              | -        | 1            |    | Τ        |   |          | Γ         |          |            |
| -        | 35                   | 1                             |                | -   -        | -1       | 1            |    | T        |   |          | T         |          |            |
| 18       | 36                   | 1                             |                |              | -        |              |    | T        |   | Г        | T         |          |            |
| 18<br>19 | 37                   | +                             |                |              |          | ┪            |    | +        |   | Г        | T         |          | П          |
| 19       | 38                   | +                             | +              | +            | +        | 7            | _  | +        |   | $t^-$    | $\dagger$ | _        |            |
| -        | 39                   | +                             | +-             | +            | +        | -            | _  | +        | _ | ┢        | +         |          | $\vdash$   |
| -        |                      | +                             | -              | +            | +        | $\dashv$     | -  | +        | - | $\vdash$ | +         | _        | -          |
| <u> </u> | 40                   | +                             | +              | +            | +        | $\dashv$     | _  | +-       | _ | -        | +         | _        | -          |
| L        | 41                   | 4                             | +              | - -          | +        | _            | _  | +        | _ | -        | +         | -        | $\vdash$   |
| _        | 42                   |                               | 4              | 4            | 4        |              | _  | +        |   | 1        | +         | _        | $\vdash$   |
| <u></u>  | 43                   |                               | _              | $\perp$      | 4        |              | L  | 4        |   | $\vdash$ | +         | _        | -          |
|          | 44                   |                               | $\perp$        |              | $\perp$  |              | _  | 1        | _ | L        | 4         |          | _          |
|          | 45                   |                               |                |              | $\perp$  |              | L  | $\perp$  |   | L        | $\perp$   |          | <u> </u> _ |
|          | 46                   | ŧΤ                            |                | $\mathbf{I}$ |          |              | L  |          |   | L        | $\perp$   |          |            |
|          | 47                   |                               |                | Т            | T        | _            | Ĺ  | _[       |   | Ĺ        |           | _        | Ĺ          |
|          |                      |                               | -              |              | 7        | _            | т- |          |   | T        | T         |          | 1          |
|          | 48                   | 5                             | - 1            | - 1          | - 1      |              | 1  | _ [      |   | ь.       | _1        | _        | _          |

| : [  | Cla          | im                   |  | _        | _        | _        | D        | ate        | ;            | _        |               |          | ٦        | 1:: |
|------|--------------|----------------------|--|----------|----------|----------|----------|------------|--------------|----------|---------------|----------|----------|-----|
|      |              | -                    | _  |          | Γ        | 1        | Ť        | Ï          |              | T-       | Т             | Т        | ヿ        |     |
| :::  |              | <u></u>              |  |          | 1        |          | 1        | Į          |              |          |               | 1        |          | ::: |
|      | Final        | <u> </u>             | ļ  |          |          | ļ        | - [      | - 1        |              |          | 1             |          | - I      | H   |
|      | ;⊑           | . <u>.</u> ₽.        |  |          | 1        | 1        |          |            |              | 1        |               | - [      |          |     |
|      | _            | Original             | Į  |          |          |          | 1        | ١          |              | 1        | -             |          | Ė        | ::  |
| -    |              |                      |  |          | -        | ╄        | +        |            |              | ├-       | +             | +        | $\dashv$ |     |
|      |              | 51                   |  |          |          | 1        | 4        |            |              | ↓_       |               | _        |          |     |
|      |              | 51<br>52<br>53       |  |          | 1        | ì        |          |            |              |          |               |          |          |     |
|      | _            | 53                   | $\neg$   | _        | 1        | 1        | 1        |            |              | Т        | $\neg \Gamma$ | П        |          |     |
|      |              | 54                   | _  |          | ╁        | ╁        | ┪        | _          | _            | †-       | $^{+}$        | 7        | $\neg$   |     |
|      |              | 54                   |  | _        | ⊢        | ╁        | -        | _          | _            | ╀        | -+            | $\dashv$ | $\dashv$ |     |
|      | L            | 54<br>55             |  |          | _        | ┸        | 4        |            | <u> </u>     | ╄        | -             | -        | -        |     |
|      |              | 56<br>57             |  |          | ļ        | 1        | -        |            |              | ١.       | 1             | $\perp$  |          |     |
|      |              | 57                   |  |          | 1        | Т        | П        |            |              | Τ        |               | - 1      |          | Ü   |
|      |              | 58                   |  | -        | t        | t        | 7        |            | Ε.           | T        | 7             |          |          |     |
|      | -            | 50                   | —  |          | +-       | +-       | ┥        | _          |              | ╁╴       | $\dashv$      | $\dashv$ | $\neg$   |     |
|      |              | 59                   |  | <u> </u> | ╄        | ╀        | -{       |            | -            | ╀        | +             |          | -        |     |
|      |              | 60                   |  | _        | L        | l        | ╛        |            | L_           | 1        | 4             | _        |          |     |
|      |              | 61                   |  | 1        | 1        | 1        | ١        |            | 1            | П        | - 1           |          |          |     |
|      |              | 62                   |  |          | 1        | Т        | $\neg$   |            |              | T        |               |          |          |     |
|      | <del> </del> | 62                   | -  | ├        | ╁        | +        | 7        |            | ┢            | 十        | 7             |          | _        |     |
|      | <u> </u>     | 63                   | ├-   | $\vdash$ | +        | +        | 4        |            | $\vdash$     | +        | $\dashv$      | -        |          | l   |
| 111  |              | 64                   | <u> </u>   | 1        | 4        | 4        | _        |            | 1-           | +        | _             | $\dashv$ |          | 1   |
| 111  |              | 64<br>65             |  |          |          | ╽        |          |            |              | 1        |               |          |          | ŀ   |
|      |              | 66                   |  | Г        | 1        | Т        |          |            |              | Т        |               |          |          |     |
|      |              | 67                   | -  | +        | +        | +        |          | $\vdash$   | $\vdash$     | †        | _             |          | _        | 1   |
|      | <u> </u>     | 07                   | ├-   | ₩        | ╁        | +        | _        | ⊢          | ╁            | +        | $\dashv$      |          |          | 1   |
|      | <u></u>      | 68                   | <u> </u>   | <u> </u> | 1        | 4        |          | <u> </u> _ | <del> </del> | +        |               |          | <u> </u> | 1   |
|      |              | 69                   |  | i        |          | L        |          |            |              |          |               |          | L        |     |
|      |              | 70                   |  | Τ        |          | Т        |          | Г          |              |          |               |          |          |     |
| 111  | -            | 71                   | <del>                                     </del> | 十        | T        | $\top$   |          | Ι-         | 1            | 1        |               |          |          | 1   |
|      | <u> </u>     | + 4 -                | +-   | ╂╌       | -        |          | _        | $\vdash$   | ╁            | +        | -             |          | -        | 1   |
|      | L            | 12                   | ╄  | ╄        | 4        | 4        | _        | <u> </u>   | -            | +        |               |          | ⊢        | 1   |
|      |              | 73                   | L  | 1_       |          | $\perp$  | _        | _          | ┺            | 4        |               |          | L-       | 4   |
|      |              | 72<br>73<br>74<br>75 | 1  |          |          |          |          |            | l            |          |               |          | L        | 1   |
| 1    |              | 75                   | Г  | T        |          | П        |          | Γ          | T            |          |               |          | ļ        | ľ   |
|      |              | 76                   | +-   | 1-       | +        | 寸        | _        | T          | Т            | 7        |               |          |          | 1   |
| ł    | -            | 177                  | ╁  | ╁        | ╁        | -+       | -        | ┰          | +            | ╅        | -             | _        | <u> </u> | 1   |
| 1    | -            | 77                   | ┼  | ╀        | +        | +        |          | ┼          | +-           | -        | _             | _        | ╁        | 1   |
|      |              | 78                   | ļ  | 1-       | 4        | 4        | _        | ╙          | ╄            | -        | _             |          | _        | 4   |
|      |              | 79                   |  |          |          |          |          | L          |              | _1       |               |          | L        | 1   |
| 1    |              | 80                   |  | Т        | П        |          |          |            |              |          |               |          |          |     |
| 1    | -            | 81                   | $\dagger$  | 十        | $\top$   | 7        | _        | T          | 1            | 7        |               | Г        | T        | 7   |
| ┨    | -            | 1 65                 | ╁╌   | ╁        | +        | -        | _        | +-         | ╁            | ┪        | _             | $\vdash$ | ✝        | 1   |
|      |              | 82                   | 1-   | 4-       | 4-       | $\dashv$ | _        | ╁          | +            | -}       |               | -        | ₽        | ┨   |
|      |              | 83                   |  | ┸        |          |          | _        | ╙          | ┸            | 4        |               | L        | ļ        | 4   |
| 1::  |              | 84                   |  |          | ļ        |          |          | 1_         | 1_           |          |               | _        | _        | ╛   |
| 1    |              | 84<br>85             | Т  | Т        | П        |          |          | Т          | Т            |          |               |          |          | -   |
| 1    | -            | 86                   | +-   | $^{+}$   | -†       | 寸        | _        | T          | 7            | _        |               | Г        | Т        | ٦   |
| -    | -            | 1 00                 | +-   | +-       | +        | -        |          | ╁╴         | ╅            | -        |               | t        | +        | 1   |
| J    |              | 87                   | 4  | +        | 4        | _        | _        | 1          | +            | $\dashv$ |               | ├        | ╁        | 4   |
| 10   |              | 88                   |  | 1        | ᆚ        |          |          | 4_         | 4            | _        |               | ┡        | ╄        | 4   |
| 7    |              | 89                   | 1  |          | -        |          |          |            |              |          |               | <u> </u> |          |     |
| 1::  |              | 90                   | 1  | 7        |          |          |          | Т          | Т            |          | i -           |          | Т        | 1   |
| -100 | -            | 91                   | +  | +        | 十        | $\neg$   |          | 十          | +            | -        |               | 1        | 1        | ٦   |
| 4:   | :: <u> </u>  |                      |  | +        | +        | _        | _        | +-         | +            | -        | _             | +        | ╁        | -   |
| 18   |              | 92                   | 4  | 4        | $\perp$  |          | _        | 4-         | 4            | _        |               | <b>├</b> | +-       | _   |
|      |              | 92<br>93             | ].   | _L       |          |          |          | _          |              |          |               | 1_       | $\perp$  |     |
| 7    |              | 94<br>95             | T  | T        |          |          |          |            |              |          |               | 1        |          |     |
| 4    | -            | 05                   | +  | +        | -        |          | Г        | $\top$     |              |          | Г             | Τ        | T        |     |
| 4    | -            | 1 30                 | +  | +        | $\dashv$ | _        | -        | +          |              |          | $\vdash$      | +        | +        | _   |
|      |              | 96                   | 4  | +        | _        |          | ١.       | +-         | +            |          | -             | ╂        | +        | _   |
|      |              | 97                   |  | $\perp$  | $\perp$  |          | <u>_</u> | ┸          | 4            |          | <u> </u>      | ╄        | 4-       | _   |
| 7:   |              | 98                   |  | T        | _ [      |          | L        | $\perp$    |              |          | L             | L        | _        | _   |
| 1    |              | 99                   | ı İ  | ┪        | 7        |          | Γ        | Т          | T            |          |               | 1        |          |     |
| +    |              | 100                  | <b>1</b>   | +        | $\dashv$ |          | T        | $\top$     | 1            | _        | Г             | 1-       | T        | _   |
|      |              | 110                  | <u>-</u>   |          |          |          | 1_       |            |              |          | <u> </u>      |          | -        |     |

| Cla      | aim                             |          |          |          |          | D        | ate          | ;        |                |            |  |
|----------|---------------------------------|----------|----------|----------|----------|----------|--------------|----------|----------------|------------|--|
|          |                                 | $\Box$   | _        |          |          | T        | $\neg$       |          | П              |            |  |
| न्न      | Original                        |          |          | Ì        |          | 1        |              |          | Į              | ı          |  |
| Final    | įģ                              |          |          |          |          | 1        |              |          |                | ļ          |  |
| _        | Ō                               |          |          | Ì        | ļ        | 1        |              |          | 1              |            |  |
|          | 101                             | $\neg$   | _        |          | ╁        | +        |              | _        | $\neg$         | $-\dagger$ |  |
|          | 101<br>102                      |          |          | t        | †-       | t        | $\neg$       |          |                |            | $\neg$   |
|          | 102                             | $\vdash$ |          | 1        | ╁╴       | +        | $\neg$       |          |                | $\neg$     | ヿ  |
|          | 103<br>104<br>105               | -        |          | ┢        | t        | +        | _            | _        |                | $\neg$     | $\dashv$   |
|          | 105                             | $\vdash$ | _        | ┢        | ╁        | +        | _            | _        |                | 一十         | $\neg$   |
|          | 106                             | $\vdash$ |          | ├-       | ╁        | +        | _            | -        |                | $\vdash$   | ᅥ  |
|          | 100                             | -        |          | -        | ╁╌       | $\dashv$ |              | -        | $\vdash$       | H          | $\dashv$   |
|          | 107                             | -        | -        | ╁╌       | +-       | ┪        |              | ┝        |                | -          |  |
|          | 108<br>109                      | $\vdash$ | -        | ╁        | +        | 1        | _            | $\vdash$ | $\vdash$       |            | 一  |
|          | 110                             | -        | ├─       | ╁╌       | ╁        | ┪        | -            | ├-       | -              | $\vdash$   | ┪  |
|          | 110                             | $\vdash$ | ⊢        | +        | ╁        | +        |              | ┢        | $\vdash$       | 1          | ᅱ  |
|          | 111                             | +-       | -        | +        | +        | $\dashv$ |              | -        |                | $\vdash$   | $\dashv$   |
|          | 112                             | $\vdash$ | ├        | ₽        | +        | -        | _            | $\vdash$ | $\vdash$       | $\vdash$   | $\dashv$   |
|          | 113<br>114                      | ┼-       | $\vdash$ | +        | +        | -        | _            | -        | $\vdash$       |            |  |
|          | 1114                            |          | -        | +        | +-       | $\dashv$ |              | ├-       | $\vdash$       | + +        | ᅱ  |
|          | 115                             | ┼        | -        | -        | +        | 4        | _            | +-       | <del> </del> — | $\vdash$   | $\dashv$   |
|          | 116                             | 1—       | -        | ╁        | +        | 4        | _            | H        | ╁              | $\vdash$   | $\dashv$   |
|          | 117                             | $\vdash$ | H        | ╀        | +        | -        |              | ├-       | ╁╌             | $\vdash$   |  |
|          | 110                             | ╁        | ┝        | +        | +        | -        | _            | $\vdash$ | ┢              | +          |  |
|          | 118<br>119<br>120<br>121<br>122 | +-       | ╁        | ╁        | +        | -        | -            | ┼        | ╁╌             | +          | -  |
|          | 120                             | ┼        | +        | ╁        | +        | _        | ⊢            | +        | +              | $\vdash$   | $\neg$   |
|          | 121                             | +        | ╁        | ┿        | +        | -        | ┝            | +-       | ┼╌             | +          | $\vdash$   |
|          | 122                             | +        | ╁        | ╫        | +        | _        | $\vdash$     | 十        | ╁              | $\vdash$   | $\vdash$   |
| <u> </u> | 123                             | ╁        | ╁        | ╁        | +        |          | H            | ╁╴       | ╁              | +          | Н  |
| ├        | 123<br>124<br>125<br>126<br>127 | ╁╴       | ╁╴       | ╁        | ╁        | _        | Н            | ╁        | ╁              | +-         | H  |
|          | 126                             | +        | t        | ╁        | $^{+}$   |          | H            | +        | $\top$         | +-         |  |
|          | 127                             | +        | ╁        | ╅        | +        |          | ╁╴           | 1        | 1              | 1          | П  |
|          | 128                             | +        | +-       | ╅        | +        |          | Н            | T        | +              |            | П  |
|          | 128<br>129                      | +        | +        |          | $^{+}$   |          | $\vdash$     | 十        | +              | +-         | Н  |
|          | 130                             |          | ╁        | +        | +        |          | $\vdash$     | +        | T              | †          |  |
| -        | 130<br>131                      | ╁╌       | t        | +-       | +        | _        | 1            | +-       | 1              | 1          |  |
|          | 132                             | +        | +-       | +        | +        | _        | T            | ╁        | $\top$         | +          |  |
| -        | 132                             | -        | +        | +-       | 十        | _        | T            | +        | $\top$         | +          |  |
| -        | 133<br>134                      | +        | +        | +        | +        | _        | T            | +        | +-             | +          | <del>                                     </del> |
| -        | 135                             | +        | +        | +        | +        |          | t            | 1-       | +-             | +-         | $t^-$  |
| -        | 136                             | +-       | +        | +        | +        | _        | t            | +        | $\top$         | $\top$     |  |
| -        | 137                             | ;        | +        | +        | 7        | _        | t            | ┪~       | †-             | 1-         | 1  |
| -        | 138                             | 1-       | $^{+}$   | 十        | 7        |          | ✝            | 十        | +              | $\top$     | 1 -  |
| -        | 138<br>139                      | 1        | 十        | +        | $\dashv$ | _        | T            | $\top$   | +              | 1          | 1  |
| -        | 140                             |          | +        | +        | -†       | _        | t            | +        | +              |            | 1  |
| -        | 141                             | -        | $^{+}$   | +        | +        |          | t            | +        | +              |            | ÌТ   |
| -        | 142                             |          | +        | +        | 1        |          | $\dagger$    | +        | 十              | $\top$     | $\top$   |
|          | 143                             | 3        | +        | +        | -        | _        | T            | $\top$   | $\top$         | $\top$     | $\dagger$  |
| -        | 144                             | 1        | +        | +        | -        | _        | $^{\dagger}$ | +        | +              | +          | T  |
| -        | 14                              |          | +        | +        | 一        | _        | $\dagger$    | +        | +              |            | 1  |
| -        | 146                             | $\pm$    | +        | +        | -        | -        | +-           | +        | +              | +-         | +  |
| -        | 14                              |          | +        | +        | -        | _        | $\dagger$    | - -      | 十              | +          | $\top$   |
| 1        | 14                              |          | +        | $\dashv$ | $\dashv$ |          | +            | +        | $\top$         | +          | T  |
| $\vdash$ | 14                              | <u>-</u> | +        | -†       |          | -        | +            | +        | +              | 十          | $\top$   |
|          | 15                              | +        | +        | $\dashv$ | -        | -        | +            | 十        | 1              | $\top$     | T  |
| _        |                                 |          |          |          |          | _        |              |          |                |            |  |